

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

REMARKS

Claims 1 and 4-21 are currently pending in the above-identified application and have been rejected. Claims 1 and 15 have been amended. Applicant respectfully reserves the right to claim the subject matter of the canceled and pre-amendment claims in this or any other application. Applicant respectfully requests reconsideration in light of the foregoing amendments and following remarks.

Claims 1, 4-7 and 10-12 stand rejected under 35 U.S.C. §102(e) as being anticipated by King et al. Applicant respectfully traverses these rejections.

Claim 1, as amended, recites a semiconductor assembly that includes, among other features, “a support structure having a top surface” and “at least one semiconductor die having a perimeter, including four sides, and a top and bottom surface” wherein the at least one semiconductor die is “secured at its bottom surface to said top surface of said support structure by a flowable adhesive material which does not extend past any one of the sides of said perimeter of said at least one semiconductor die”. Claims 4-7 and 10-12 depend from claim 1.

King et al. discloses a stack of packaged memory die that includes a board 18, and integrated circuit semiconductor devices 14A-D. The semiconductor device 14D is attached to the board 18 by way of an adhesive 22D which may be flowable.

Applicant respectfully disagrees with the contention in the Office action that King et al. teaches or suggests that the “flowable adhesive material ... does not extend past” a “perimeter of said at least one semiconductor die” as recited in claim 1. The common definition of “perimeter” is “the boundary of a closed plane figure”. Merriam

Webster's Collegiate Dictionary, 10th ed., p. 863. This definition of perimeter is consistent with the manner in which "perimeter" is used in the specification. Nonetheless, claim 1 has been amended to clarify that the recited perimeter has four sides and that a flowable adhesive material "does not extend past any one of the sides of said perimeter of said at least one semiconductor die".

King et al. does not mention the location of the adhesive 22D, but only discloses it in the figures 1, 3 and 13A. It is not at all clear that the King et al. figures accurately depict the extent of the adhesive. Moreover, the figures are an incomplete disclosure since the figures do not show definitively whether the adhesive 22D extends beyond the boundary of the semiconductor device. Even assuming arguendo the accuracy of the King et al. figures with respect to the location of the depicted adhesive, figures 1, 3 and 13A provide no relevant disclosure as to the positioning of the adhesive 22D relative to the boundary of the semiconductor device facing out of the page and the opposite boundary facing into the page. Without such a disclosure, King et al. clearly cannot teach or suggest that the "flowable adhesive material ... does not extend past any one of the sides of said perimeter of said at least one semiconductor die" as recited in claim 1.

Claims 8 and 9 stand rejected under 35 U.S.C. §103 as being unpatentable over King et al. in view of Ball. Claims 13 and 14 stand rejected under 35 U.S.C. §103 as being unpatentable over King et al. in view of Fukui et al. Applicant respectfully traverses these rejections. Claims 8, 9, 13 and 14 depend from claim 1. As noted above, King et al. fails to teach or suggest "a flowable adhesive material which does not extend past any one of the sides of said perimeter of said at least one semiconductor die". Ball is relied upon as

allegedly disclosing a distance between an electrical contact area and a perimeter of at least one semiconductor die being less than or equal to about 200 microns. Fukui et al. is relied upon as allegedly disclosing an encapsulating material for encapsulating a die, an electrical communication, and at least a portion of a support structure. Ball and Fukui et al. do not, however, add any relevant disclosure to King et al. with regard to “a flowable adhesive material which does not extend past any one of the sides of said perimeter of said at least one semiconductor die”.

Claims 15-21 stand rejected under 35 U.S.C. §103 as being unpatentable over King et al. in view of Lo et al. Applicant respectfully traverses this rejection.

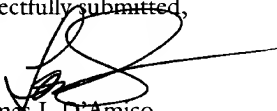
Claim 15 recites a semiconductor assembly that includes “ first semiconductor die having a top and a bottom surface” and “a second semiconductor die having a perimeter, including four sides, and a top and bottom surface, said bottom surface having a smaller area than said top surface of said first semiconductor die”. The second die is “secured at its bottom surface to said top surface of said first semiconductor die by a flowable adhesive material which does not extend past any one of the sides of said perimeter of said second semiconductor die”. Claims 16-21 depend from claim 15.

As noted above, King et al. fails to teach or suggest “a flowable adhesive material which does not extend past any one of the sides of said perimeter of said second semiconductor die”. Lo et al. provides no relevant disclosure with regard to the recited adhesive material.

For at least the reasons provided above, applicant believes that each of the presently pending claims is in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Dated: May 30, 2003

Respectfully submitted,

By: 
Thomas J. D'Amico
Registration No. 28,371
DICKSTEIN SHAPIRO MORIN &
OSHINSKY, LLP
2101 L Street, NW
Washington, DC 20037-1526

Attorneys for Applicants

VERSION WITH MARKINGS TO SHOW CHANGES MADE

The claims 1 and 15 have been rewritten.

1. (Twice Amended) A semiconductor assembly comprising:

a support structure having a top surface, wherein said support structure is a film; and

at least one semiconductor die having a perimeter, including four sides, and a top and bottom surface, said bottom surface having a smaller area than said top surface of said support structure, said at least one semiconductor die being secured at its bottom surface to said top surface of said support structure by a flowable adhesive material which does not extend past [a] any one of the sides of said perimeter of said at least one semiconductor die.

15. (Twice Amended) A semiconductor assembly comprising:

a first semiconductor die having a top and a bottom surface;

a second semiconductor die having a perimeter, including four sides, and a top and bottom surface, said bottom surface having a smaller area than said top surface of said first semiconductor die, said second die being secured at its bottom surface to said top surface of said first semiconductor die by a flowable adhesive material which does not extend past [a] any one of the sides of said perimeter of said second semiconductor die; and

wherein said top surface of said first semiconductor die has at least one electrical contact area positioned at a location exterior to said perimeter of said second semiconductor die, and wherein a distance between said electrical contact area and said perimeter of said second semiconductor die is less than or equal to about 428 microns.